L 17507-63 EWT(1)/FCS/ES(A)/ES(1)/ES(c)/ES(k) AMD/AFFTC/AFMDC Pb-4
ACCESSION NR: AP3004435 A/K S/0020/63/151/004/0978/0981

AUTHORS: Voskresenskiyi, A. D.; Kiselev, A. A.; Bryuzgina, M. I.

TITLE: Cardiac circulation and myocardial oxygen consumption during lateral accelerations.

SOURCE: AN SSSR. Doklady, v. 151, no. 4, 1963, 978-981

TOPIC TAGS: acceleration, cardiac circulation, myocardial oxygen consumption.

ABSTRACT: Cardiac circulation and myocardial oxygen consumption were studied in 2 series of dogs subjected to a lateral acceleration (spine-thorax) of 6 g for 1 min and 4 min. A DP-2 apparatus was used to ensure that the heart was supplied with sufficient oxygen. After 1 min acceleration at 6 g the percentage of oxygen in blood from the arteries and coronary sinus and the arteriovenous difference were only slightly different from the initial values. In the majority of cases the rate at which blood was discharged from the coronary sinus was higher. Under these conditions the authors consider that the body's compensatory mechanisms are adequate. After 4 min acceleration the percentage oxygen in arterial blood decreased considerably. There was also a reduction in the percentage oxygen in blood from the coronary sinus. However, this reduction was not large enough to maintain the initial value for arteriovenous differences. In all cases there was

Card 1/2

L 17547-63

ACCESSION NR: AP3004435

an increase in the rate at which blood was discharged from the coronary sinus. After deceleration all of these values tended to return to their initial levels. Changes in the ECG were not very specific under these conditions. Sinusoidal arrhythmia and extra-systoles were noted together with a decrease in the pulse rate and a drop in arterial pressure. The authors consider that myocardial hypoxia might develop under these conditions. Orig. art. has: 1 table.

ASSOCIATION: none

SUBMITTED: 11Feb63 DATE ACQ: 21Aug63 ENCL: 00

SUB CODE: AM NO REF SOV: 007 OTHER: 012

Card 2/2

VAN CHIH-GAN [Wang Chih-kang]; KISELEV, A.A.

Theoretical examination of the energy of an electron transition corresponding to a β-band. Fiz. tver. tela 5 no.11:3231-3237 N '63. (MIRA 16:12)

1. Leningradskiy gosudarstvennyy universitet.

KISELEV, A.A.

Calculating the position of a β-band in the absorption spectrum of the NaCl crystal. Fiz. tver. tela 5 no.11:3238-3246 N '63. (MIRA 16:12)

1. Leningradskiy gosudarstvennyy universitet.

IN'KOV, Yuriy Ivanovich; KISHKIN, A.A., redaktor; VIGANT, Ya. Ya., tekhnicheskiy redaktor.

[Radio apparatus; the market of capitalist countries] Radioapparatura; rynok kapitalisticheskikh stran. Moskva, Vneshtorgizdat, 1955. 70 p. (Radio--Apparatus and supplies) (MLRA 9:5)

I[SELEV, Arkadiy Ivanovich]; SMIRNOV, A.S., doktor tekhnicheskikh nauk, professor, retsenzent, nauchnyy redaktor; SMIRNOVA, A.P., redaktor izdatel'stva; PERSON, M.N., tekhnicheskiy redaktor

[Gas supply] Gazosnabzhenie. Moskva, Gos. izd-vo lit-ry po stroit. i arkhitekture. Pt.2. [Transportation, storage, distribution, and use of gas] Transportirovanie, khranenie, raspredelenie i ispol'zovanie gaza. 1956. 215 p. (MLRA 10:2)
(Gas distribution)

SHASHKIN, P.I., inzh.; BRAY, I.V., inzh.; KISELEV, A.A., inzh.; MASLENKOVSKIY, L.G., inzh.

Unit for regenerating the wash liquid. Vest.mash. 41 no.7:75-76 Jl '61. (MIRA 14:6)

(Cleaning compounds)

KISELEV, A. A. et al.

"Hydrogen Absorption and Changes in the Mechanical Properties of Zirconium and Its Binary Alloys when Corroded in Water and Steam at High Temperatures and Pressures."

"Research on the Corrosion of Zirconium Alloys in Water and Steam at High Temperatures."

papers distributed at the IAEA Conference on Corrosion of Reactor Materials in Salzburg, Austria, 4-9 June 1962.

KISELEV, A.A.

On the theory of many-electron systems with unfilled shells. Vest. LGU 17 no.22:5-12 '62. (MIRA 15:12)
(Nuclear shell theory)

KISELEV, A. A.

Designating measurement units in technical literature.
Standartizatsiia 26 no.10:61-62 O '62. (MIRA 15:10)

(Weights and measures)

KHABE, L.; KISELEV, A., inzh.; GUBAREV, A., tekhnik-tekhnolog.

Double-deck millet huller. Mukh.-elev. prom. 24 no.4:16-18 Ap '58.
(MIRA 11:5)

1. Upravleniye mukomol'no-krupyanykh i kombikormovykh predpriyatiy Ministerstva khleboproduktov SSSR (for Khabe, Kiselev). 2. Voronezhskoye oblastnoye upravleniye khleboproduktor (for Gubarev).
(Grain milling machinery)

22 (1)

SOV/27-59-3-5/37

AUTHOR: Kiselev, A.

TITLE: The Profitableness of Training Workshops
(O dokhodnosti uchebnykh masterskikh)

PERIODICAL: Professional'no-tekhnicheskoye obrazovaniye, 1959, Nr 3, p 5 (USSR)

ABSTRACT: A number of measures must be adopted to increase the profitableness of school workshops. They must stop producing articles which are turned out by mass production enterprises. The Seven-Year Plan provides for the manufacture of machinery which has never existed before. Some of these machines may be good objects for students' training. The manufacture of them will be more profitable than the making of metal-cutting machine tools. The turning out of new kinds of machinery not so far manufactured by any other enterprise may release industry from the necessity of erecting new plants. The schools should also be adapted to carry out orders of local enterprises which are suitable for training purposes. It is pointed out that only such technological processes should be

1/2

KISELEV, A.

Sampler for groats. Muk.-elev.prom. 25 no.6:13 Je '59.
(MIRA 12:9)
(Cereal products--Analysis)

KHABE, L., inzh.; KISELEV, A., inzh.

Double-deck buckwheat scouring and peeling machine. Muk.-elev. prom. 25 no.3:23-24 Mr '59. (MIRA 12:6)
(Buckwheat) (Grain-milling machinery)

KISELEV, A., inzh.

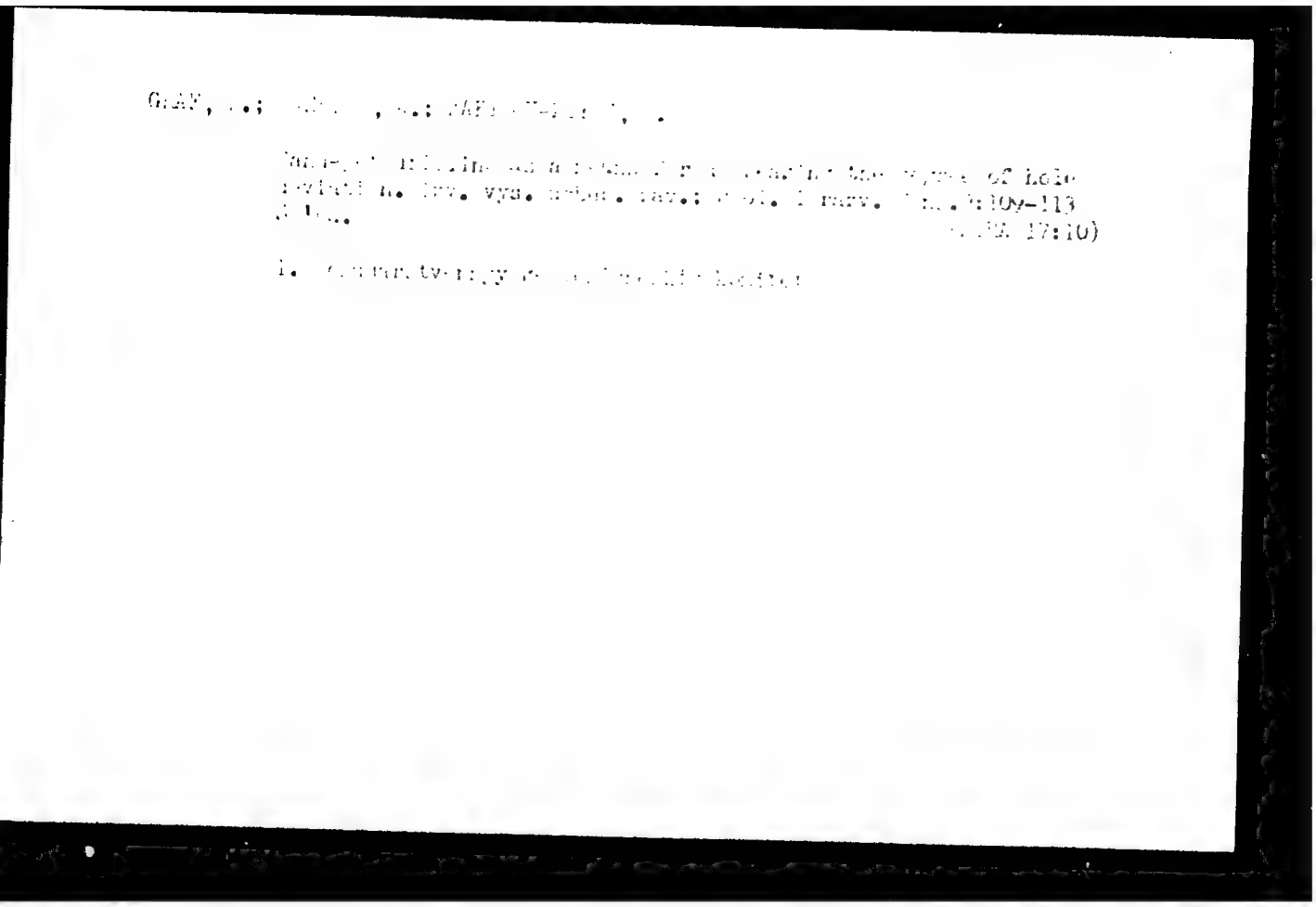
Cleaning buckwheat of impurities, difficult to remove. Muk.-elev.prom. 25 no.2:19-20 F '59. (MIRA 12:4)
(Buckwheat--Cleaning)

KISELEV, A.

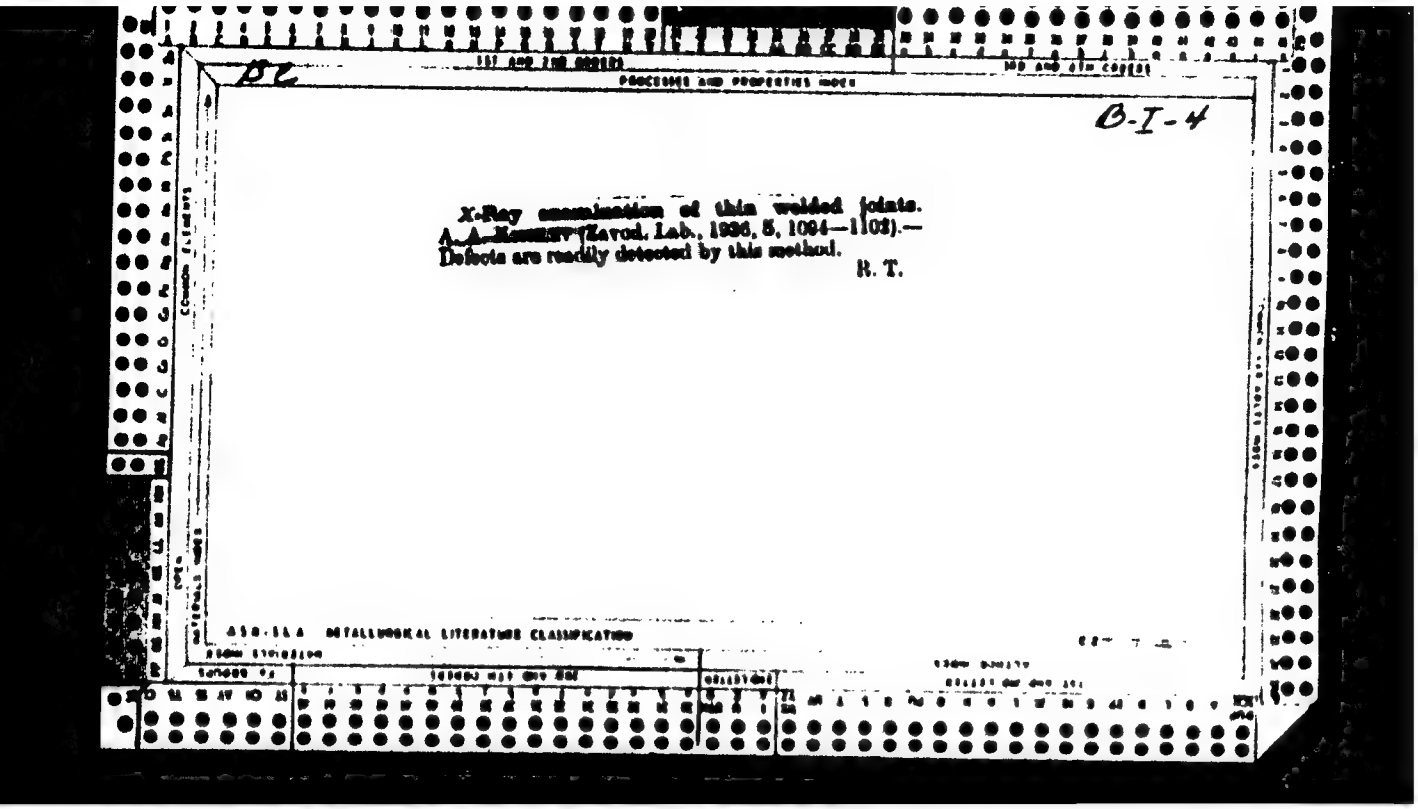
Improving the technology of oat processing. Muk.-elev.prom. 21 no.10:27-28 O '55. (MLRA 9:1)

1.Glavnoye upravleniye mukomol'noy, krupyanoy i kombikormovoy promyzhlennosti.

(Oat milling)

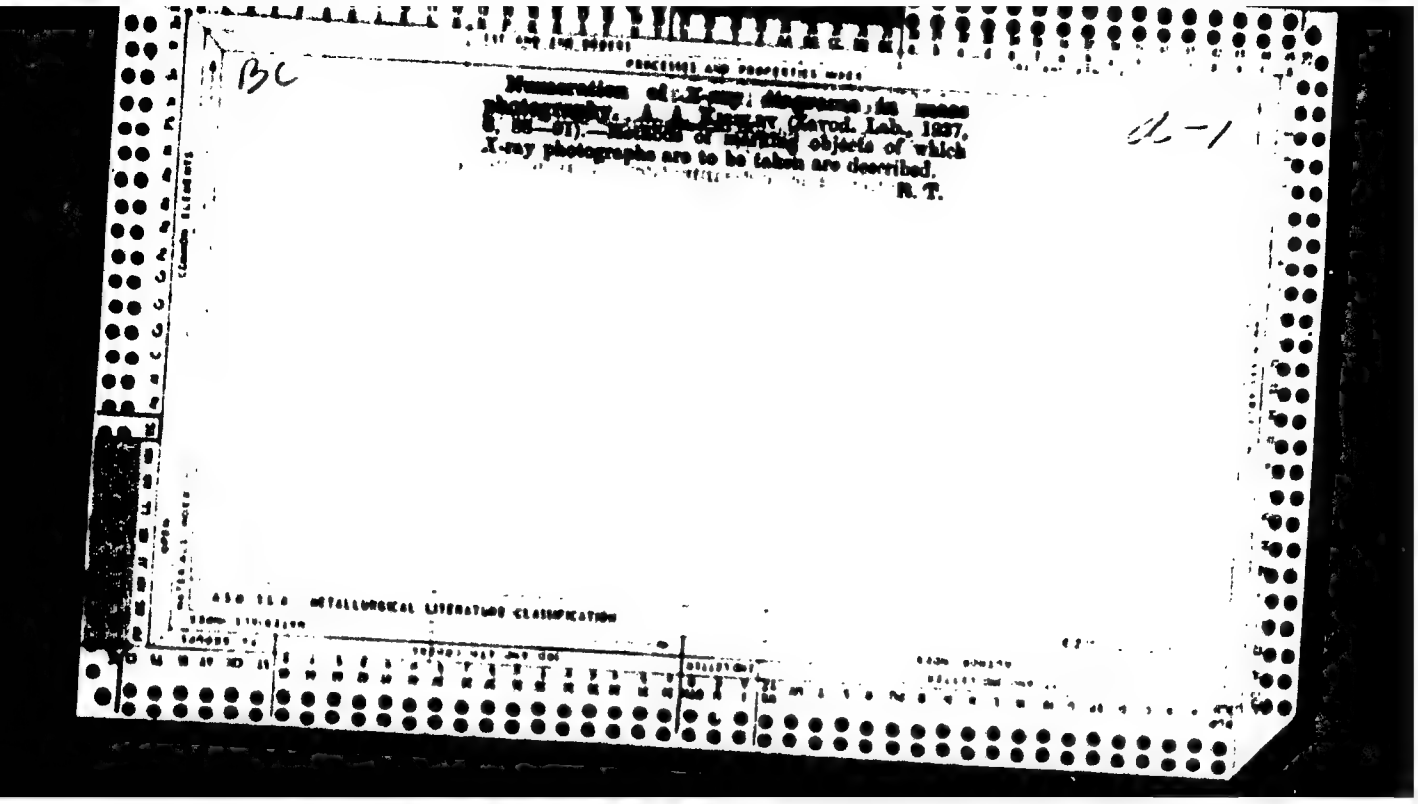


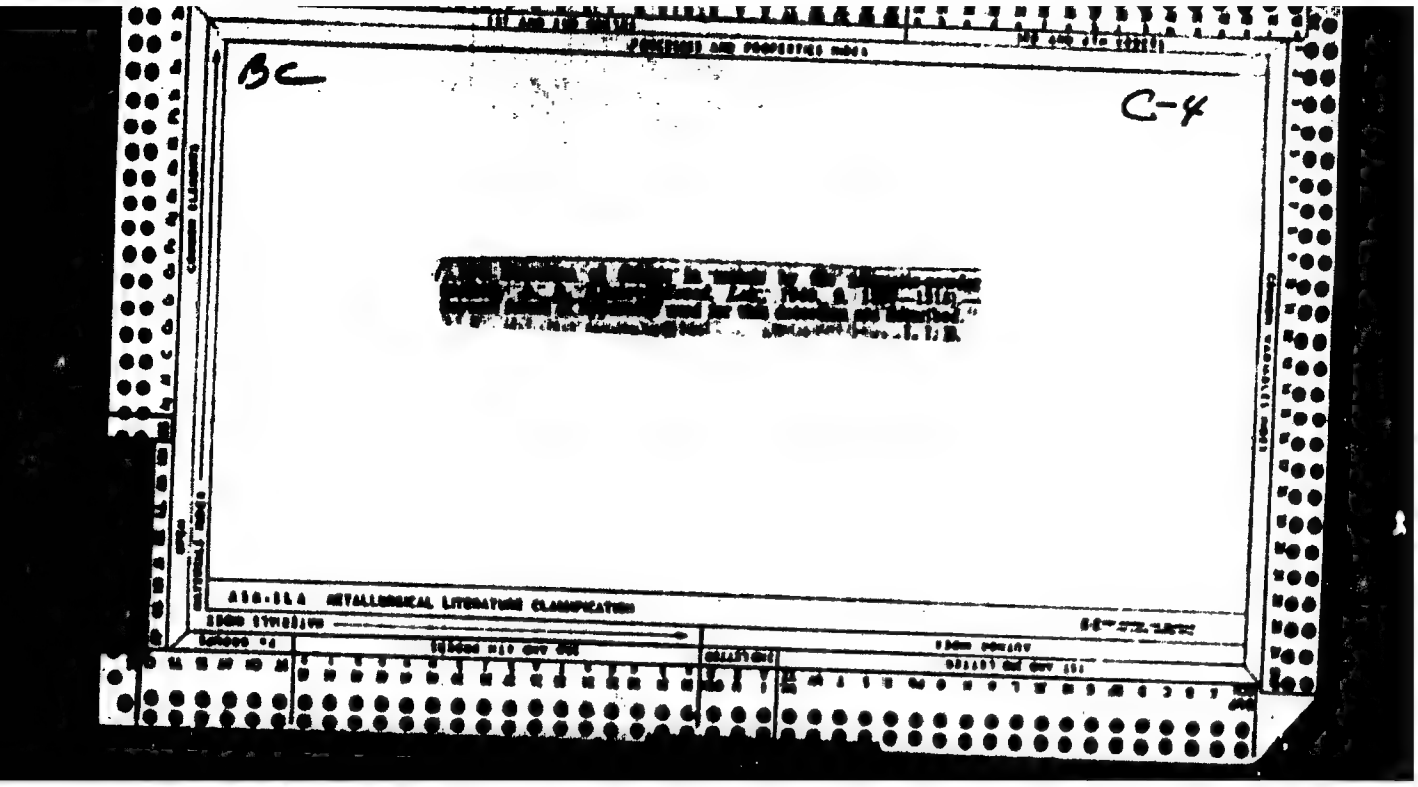
APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000722730006-4"

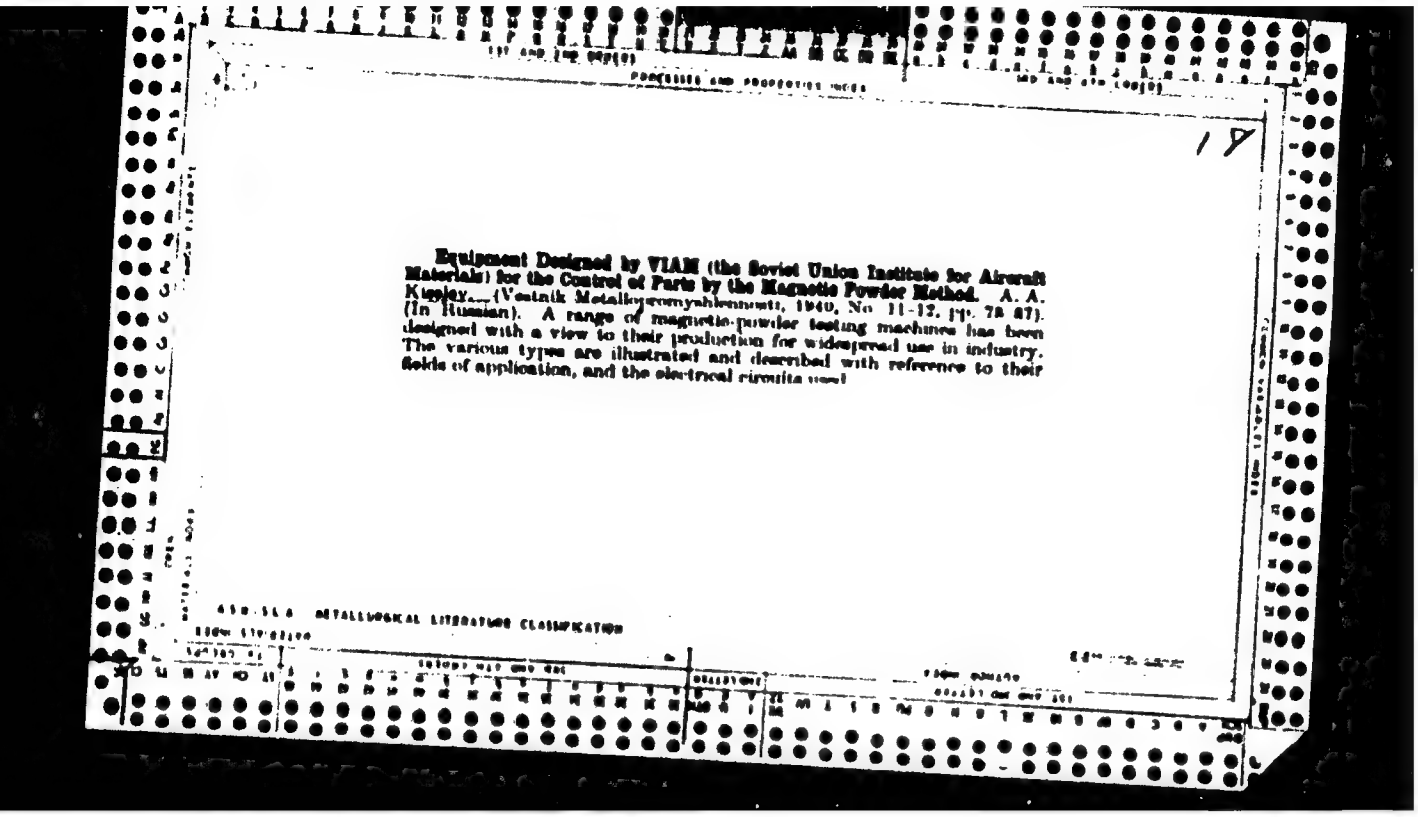


B-I-4

X-Ray examination of thin welded joints.
A. A. [illegible] (Naval. Lab., 1936, 5, 1094—1103).—
Defects are readily detected by this method.
R. T.

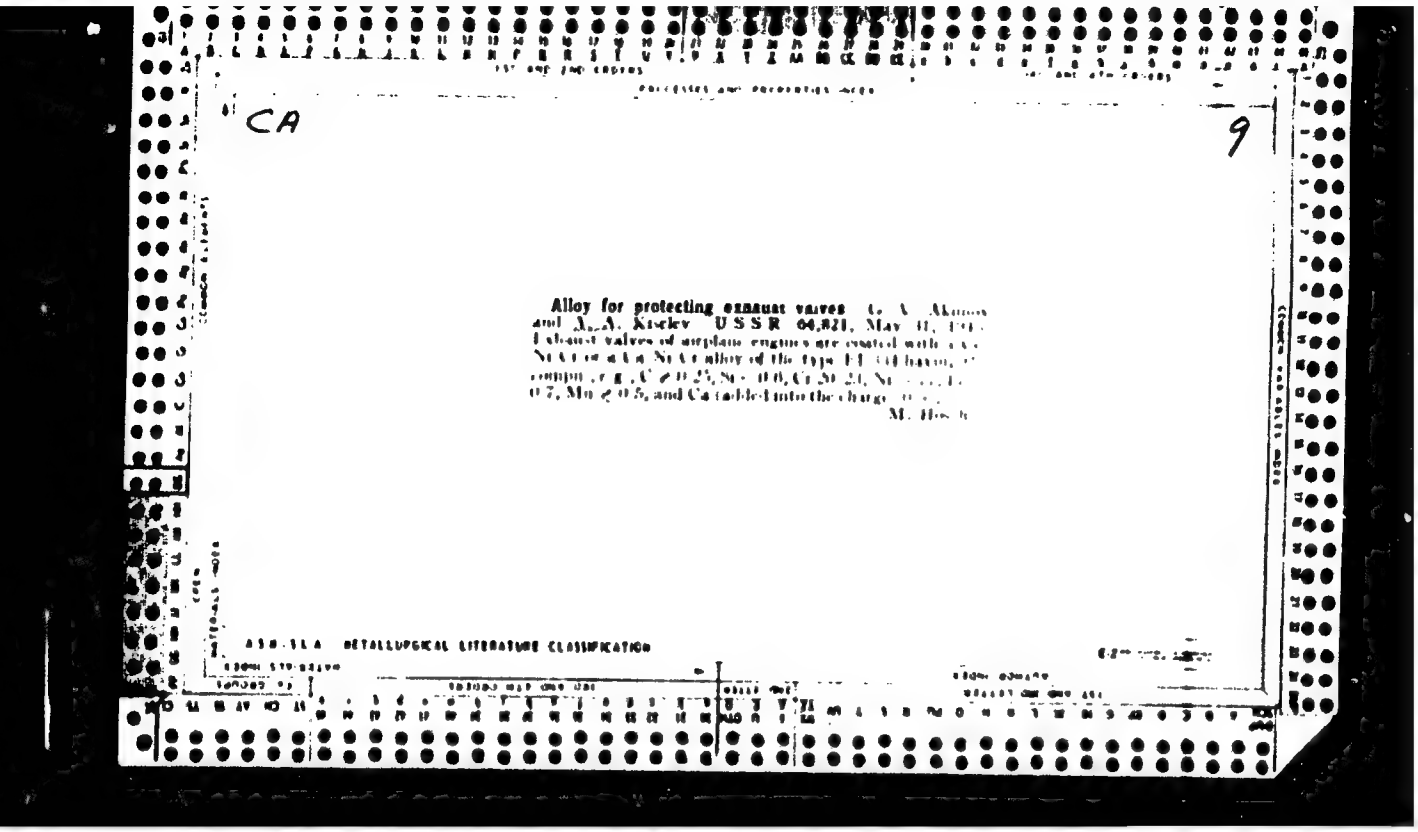






17

Equipment Designed by VIAM (the Soviet Union Institute for Aircraft Materials) for the Control of Parts by the Magnetic Powder Method. A. A. Kupley. (Vestnik Metallopromyshlennosti, 1940, No 11-12, [pp. 78-87]. (In Russian). A range of magnetic-powder testing machines has been designed with a view to their production for widespread use in industry. The various types are illustrated and described with reference to their fields of application, and the electrical circuits used.

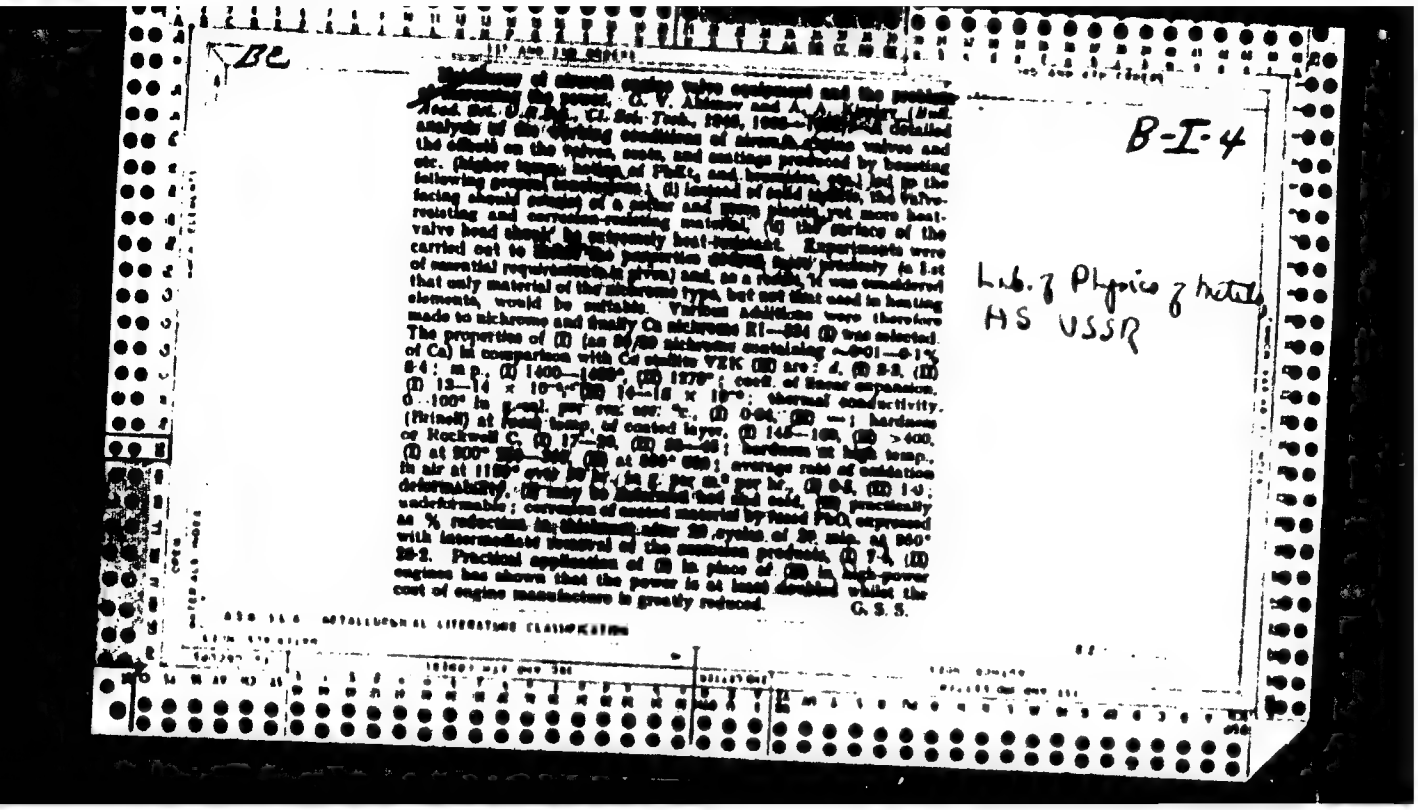


CA

9

Alloy for protecting exhaust valves G. V. Akimov and A. A. Kiselev USSR 64,821, May 31, 1944. Exhaust valves of airplane engines are coated with a Ni-Cr or a Co-Ni-Cr alloy of the type [illegible], e.g., composition, e.g., C 0.25, Si 1.0, Cr 20-24, Ni [illegible], 0.7, Mn 0.5, and Ca added into the charge [illegible]. M. Hosch

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

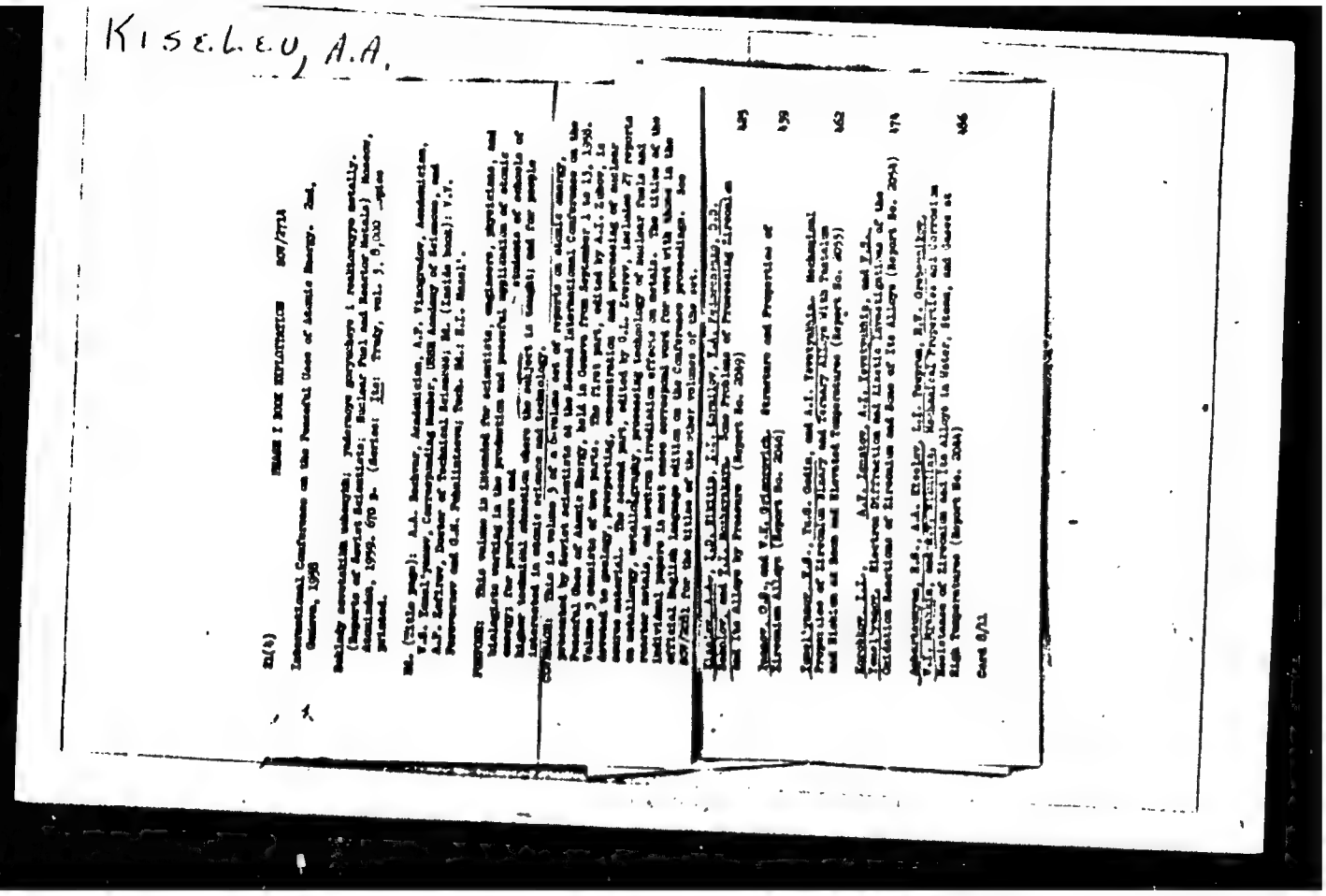


Be

B-I-4

Lib. of Physics & Metals
AS USSR

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000722730006-4"



KISELEV, A.A.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000722730006-4"

133-1-9/24

AUTHORS: Kiselev, A.A., Lapshova, M.P., and Kul'kova, M. N., Engineers

TITLE: Smelting of Ball Bearing Steel in an Acid Furnace Fired with Natural Gas and Fuel Oil (Vyplavka sharikopodshipnikovoy stali v kisloy pechi pri otoplenii prirodnym gazom i mazutom)

PERIODICAL: Stal', 1958, No.1, pp. 35 - 40 (USSR)

ABSTRACT: An investigation of some technological factors of smelting and teeming of ball bearing steel on the degree of its contamination and the nature of non-metallic inclusions is described. Steel ШХ15 was smelted in a 50-ton acid open-hearth furnace, deoxidised with aluminium in the ladle (125 g/ton) and bottom teemed into 4-ton ingots. The charge consisted of basic open-hearth steel containing no more than 0.015% of sulphur and phosphorus and a high quality pig ПВК, Class A. The supply of this pig and low-sulphur oil was decreasing and this was accompanied by the increasing impurity of steel. Therefore, the furnace was transferred to firing with natural gas and fuel oil. This decreased the duration of heat by 35 min., and stoppages for hot repairs decreased by 0.59%. When the furnace was fired with fuel oil alone (0.4 - 0.5% S), the content of sulphur after melt out was 0.017 - 0.020%, on transfer to mixed firing the content of sulphur decreased to 0.013 - 0.016%. This brought

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Smelting of Ball Bearing Steel in an Acid Furnace Fired with Natural Gas and Fuel Oil

133-1-9/24

a considerable decrease in the contamination of metal by oxide and sulphide inclusions (a comparison in the form of a table is given in the text). The influence of various technological factors on the degree of contamination of steel by non-metallic inclusions was determined by statistical treatment of data on current production. The following factors were considered: the influence of the temperature of metal on tapping (Fig.1); the duration of fettling (Fig.2) and the amount of reduced silicon. With the amount of reduced silicon of 0.18 - 0.22%, the degree of contamination is the highest, decreasing with increasing silicon content in the finished metal. An investigation of the influence of the amount of reduced silicon and silicon content in the finished metal on the degree of gas saturation of the steel indicated that the maximum content of oxygen and hydrogen corresponds to the amount of reduced silicon of 0.18 - 0.22% or to the content of silicon in the finished metal, 0.22 - 0.23%. The contamination of steel by oxides increases with increasing ferrous oxide content of slag before de-oxidation (it should not exceed 20%). It was also found that deoxidation of steel with aluminium also

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Smelting of Ball Bearing Steel in an Acid Furnace Fired with Natural Gas and Fuel Oil

leads to a contamination of steel by oxides; therefore, some exprimental heats were made in which: a) steel was deoxidised in the ladle with silicon-zirconium instead of aluminium, b) deoxidation with smaller quantities of aluminium (60 - 100 instead of 125 g/ton) and c) simultaneous deoxidation with silicon-zirconium and aluminium. The nature of non-metallic inclusions was investigated on metal from all heats deoxidised with silicon-zirconium, silicon-zirconium and aluminium, and on 10 heats produced by the usual technology. The quantity and composition of non-metallic inclusions are given in Tables 1 and 2; the dependence of the quantity of inclusions in steel on its temperature on tapping - Fig.3; the dependence of the degree of oxide contamination on the content of spinels in inclusions - Fig.4; the dependence of the proportion of spinels in inclusions on the content of FeO in slag - Fig.5; the dependence of the total amount of inclusions o. the duration of teeming an ingot - Fig.6; the dependence of oxygen content of metal on its temprature on tapping - Fig.7, and on FeO content in slag - Fig.8; the influence of silicon content of metal before tapping on the gas saturations of steel during

Smelting of Ball Bearing Steel in an Acid Furnace Fired with Natural Gas and Fuel Oil

this period - Fig.9. Conclusions: 1) The transfer of smelting ball bearing steel by the silicon-reducing process in an acid furnace on firing with a mixture of natural gas and fuel oil decreased the degree of contamination of steel by sulphide and oxide inclusions and the duration of the heat by 35 min. 2) This decrease in the degree of contamination is obtained providing a number of technological factors are maintained: a) the temperature of metal on tapping (according to an immersion thermocouple) should be 1 580 - 1 600 °C; b) the amount of reduced silicon should exceed 0.23%; c) the content of iron oxide in slag before deoxidation should be from 15 to 20%. 3) On deoxidation of steel in ladle with silicon-zirconium instead of aluminium, the degree of contamination by oxides decreases by 0.35 to 0.60 and that by sulphides increased by 0.2 - 0.3; whereupon, the amount of non-metallic inclusions which can be electrolytically separated is higher than when deoxidising with aluminium. A special feature of the inclusions obtained on deoxidation with silicon-zirconium is their low content of spinels which decrease the degree of contamination by oxides. 4) The degree of contamination by oxides increases with increasing proportion of

Smelting of Ball Bearing Steel in an Acid Furnace Fired with Natural Gas and Fuel Oil

spinels and the ratio of Al_2O_3/SiO_2 in the composition of inclusions. The amount of spinels and the Al_2O_3/SiO_2 ratio in the composition of inclusions increase with increasing content of ferrous oxide in slag before deoxidations. 5) During tapping of the heat, the content of oxygen in steel decreases due to deoxidation of steel in the ladle with aluminium, decreasing temperature of the metal and self-deoxidation of steel with carbon. 6) Higher concentrations of oxygen in steel and increasing proportion of total inclusions in steel correspond to higher tapping temperatures. The following engineers participated in the work: S.Z. Kupryakhina, Yu.A. Kartsin and O.S. Zheludeva. There are 2 tables and 9 figures.

ASSOCIATION: "Krasnyy Oktyabr'" Works (Zavod "Krasnyy Oktyabr'")

AVAILABLE: Library of Congress

AUTHOR: Kiselev, A.A. 130-58-4-7/20

TITLE: Production of Low-carbon Steel in Open-hearth Furnaces (Vyplavka nizkouglerodistoy stali v martenovskikh pechakh)

PERIODICAL: Metallurg, 1958, Nr 4, pp 10 - 11 (USSR).

ABSTRACT: Bi-metal strip, cold-rolled from Armco-type steel (0.04% C, 0.20% Mn, 0.20% Si, 0.030% S, 0.025% P, 0.15% Cu, Cr, Ni each) and aluminium alloy ASM (aluminium with 3.5 - 5.5% Sb and 0.3 - 0.7% Mg) have been used instead of lead bronze for tractor (types D-54, D-35) crankshaft bearings. The author outlines the difficulties of producing this steel in open-hearth furnaces. Early experience showed that cracking during rolling took place when additional deoxidation with silicon and manganese had not been effected. After correcting this rolling of ingots was satisfactory throughout 1956, but separation of the strip was observed. After statistical analysis of data for 24 heats, the production method was modified and a further 25 experimental heats were produced of which only two gave separation of bi-metal strip but more showed cracking in the blooming mill. After analysis of the reasons for these faults, the "Krasnyy Oktyabr" Works adopted a production technology with the following main features: only

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furnaces with high firing rates are used; carbon content in the metal on melt down is 0.25 - 0.70%; rate of decarburisation in the final refining period is not less than 0.0008% C per minute, which is secured, for a bath with 0.07% or less carbon, by adding 1 000 - 2 000 kg of iron ore to a 50-ton heat; the slag before tapping contains 18 - 30% ferrous oxide; deoxidation is carried out in the ladle with 1 400 - 1 700 g aluminium per ton of steel; the content of silicon and manganese in the finished steel is at least 0.13%.

ASSOCIATION: Zavod "Krasnyy Oktyabr'" (Krasnyy Oktyabr' Works)

SUSLIN, Petr Nikolayevich; KISELEV, A.A., redaktor; VIGANT, Ya.Ya., tekhnicheskiy redaktor.

[Ferrous metals; the market in capitalist countries] Chernye metally; rynok kapitalisticheskikh stran. Moskva, Vneshtorgizdat, 1956. 222 p.
(Iron) (Steel) (Iron ores) (MLRA 9:4)

YEFIMOV, V.A.; DANILIN, V.I.; LAPSHOVA, M.P.; GRIBENYUK, V.P.; KISELEV, A.A.

Effect of the temperature of pouring and the mold shape on the quality of steel ingots. Vop.proizv.stali no.6:96-109 '58. (MIRA 12:3)
(Steel ingots) (Metallurgical plants--Quality control)

KISELEV, A.A., inzh.; LAPSHOVA, M.P.; KUL'KOVA, M.N.; V rabote prinimali uchastiye: KUPRYAKHINA, S.Z., inzh.; KARTSIN, Yu.A., inzh. ZHELUDEVA, O.S., inzh.

Smelting roller-bearing steel in acid furnaces using natural gas and fuel oil [with summary in English]. Stal' 18 no.1:35-40 Ja '58. (MIRA 11:1)

1.Zavod "Krasnyy Oktyabr'" (for Kiselev, Lapshova, Kul'kova).
(Smelting) (Bearing metals)

18.7000

75972
SOV/133-59-10-33/39

AUTHOR: Kiselev, A. A. (Engineer)

TITLE: Spotty Segregation in Low-Alloy Steels

PERIODICAL: Stal', 1959, Nr 10, pp 942-946 (USSR)

ABSTRACT: Although numerous studies have been devoted to the mechanism and nature of spotty segregation and its influence on the formation of imperfections /Refs 2,3 and 4: Morenko, G. F., Stal', 1954, Nr 6; Mokhir, Ye. D. and Kozlov, F. V., Stal', 1954, Nr 6; Oreshkin, V. D, Stal', 1955, Nr 1/ no unanimous opinion has been arrived at. With the assistance of Kul'kova, M. N., and Rostovskaya, L. A. (Engineers) the author tested the following types of steel with a view to the above: 12KhMF, 35KhGSA, 36G2S, 15KhGNTA, and SKhL-4. All specimens were molten in natural gas-mazut fired 150-t open-hearth furnaces by the scrap process. The author concludes as follows on the basis of experimental results: (1) most imperfections are observed in the upper half of the ingots and in the zones adjacent to the center

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KISELEV, A.A.; VOLNYANSKIY, V.M.

Ingot shape and surface defects. Metallurg 5 no.2:19-20
F '60. (MIRA 13:5)

1. Rukovoditel' gruppy slitka TSentral'noy zavodskoy laboratorii zavoda "Krasnyy Oktyabr'" (for Kiselev). 2. Nachal'nik razlivochnogo proleta martenovskogo tsekha zavoda "Krasnyy Oktyabr'" (for Volnyanskiy).
(Steel ingots) (Steel--Defects)

18.1150,18.5200

77606
30V/133-60-2-6/25

AUTHORS: Kiselev, A. A., and Marchenkovskiy, G. F. (Engineers)

TITLE: Low-Carbon Steel for Bimetal Production

PERIODICAL: Stal', 1960, Nr 2, pp 121-123 (USSR)

ABSTRACT: Bimetal strip from low-carbon steel (Armco iron) and ASM alloy is made by cold rolling. The maximum allowed amount of additions in Armco iron is:

C	Mn	Si	S	P	Cu	Cr	Ni
0,04	0,20	0,20	0,030	0,025	0,15	0,15	0,15

The ASM alloy consists of 3.5-5.5% Sb, 0.3-0.7% Mg, and balance aluminum. Depending on the extent of oxidation Armco iron has a tendency toward cracking (in ingots and billets) or lamination (in ready Bimetal). Adherence to the carefully developed melting and pouring practice is absolutely necessary in order to obtain suitable metal. (1) Steel is smelted only in high thermal capacity heat treating furnaces. (2) Steel is poured with a clean surface only to 1/2 of the mold

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height with a subsequent crust formation. (3) Carbon content, after melting, ranges from 0.25-0.70%. (4) The speed at which C burns out during the refining period must be not less than 0.008% min. In order to obtain carbon content below 0.07%, 1.5 to 2.0 tons of ore have to be added to the charge per every 50 tons of heat alternating them with lime additions of 800 to 1,600 kg. As a result, slag basicity before pouring must be not lower than 2.4 with a ferrous oxide content of 18-30%. (5) For ladle deoxidation aluminum (1,400 to 1,700 gr/ton steel), metallic manganese, and 75% ferrosilicon are added with a view to produce a minimum 0.13% silicon and manganese contents in finished metal. (6) The melt rolled on the blooming mill is considered satisfactory with a maximum content of 0.005% Al. (7) To eliminate wear of the stopper and of ladle lining, 400 to 800 kg of lime was added to the ladle. There are 3 figures; and 1 Soviet reference.

ASSOCIATION: Plant "Krasnyy Oktyabr'" (Zavod "Krasnyy Oktyabr'")

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KISELEV, A. A.

Cand Tech Sci - (diss) "Study of the process of forming hot fissures in steel ingots." Moscow, 1961. 17 pp incl cover; (Ministry of Higher and Secondary Specialist Education RSFSR, Moscow Order of Labor Red Banner Inst of Steel imeni I. V. Stalin); 150 copies; free; (KL, 5-61 sup, 190)

S/133/61/000/002/001/014
A054/A033

AUTHORS: Kiselev, A.A., Engineer, and Yavoyskiy, V.I., Professor, Doctor of Technical Sciences

TITLE: Improving the Crack Resistance of Steel Ingots

PERIODICAL: Stal', 1961, No. 2, pp. 112-119

TEXT: Cracks originate mainly in low-carbon (0.10-0.25% C) steel ingots, it was found. In order to study the causes of fissuring, tests were carried out with Ст.3 (St.3) and 08сп (08 sp) steel ingots with the following composition:

	C	Mn	Si	S	P	Cr	Ni	Cu	Al
St.3:	0.19	0.45	0.16	0.025	0.013	0.21	0.16	0.13	-
08 sp:	0.10	0.36	0.09	0.021	0.014	0.17	0.15	0.13	0.03

During the pouring process it was found that in the initial period of crystallization the solidification of the ingot, in vertical direction and along

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the periphery, does not take place at a uniform rate: (see fig.2)

Section according to fig.2:	I	II	III	IV	V
Time of solidification, min	1.2	1.5	1.8	2.3	2.8
Distance of the section from the bottom, mm	1,500	1,200	900	600	300
Thickness of the skin in the middle of the edge, mm					
δ_1 (edge A)	22	26	30.5	33	39
δ_2 (edge B)	22	26	32	35	43
Non-uniformity coefficient of solidification, $\delta_1 : \delta_2$	1.0	1.0	0.95	0.94	0.91

With regard to the spot where the skin is the thickest, the following data were obtained: (for ingots with wavy surface)

Section according to fig.2:	I	III	IV	V
Interval of solidification, min	1.2	1.8	2.3	2.8
Thickness of the skin, mm in the corner of the ingot	15.5	23.5	25.0	32.0

in the projecting part of the wavy surface	23.0	33.0	36.0	37.5
Non-uniformity coefficient of solidification	0.67	0.71	0.70	0.85

The rate of solidification was also studied in 18ХГТ (18KhGT) ingots (6.1 ton) and it was found that this rate is slower in the surface layers than in the lower ones: at 100 mm from the ingot mold wall in the bottom part (circulation zone of the metal) the coefficient of solidification rate amounts to 3.9 $cm/min^{0.5}$, while at 65 mm depth in the top (1,100 mm from the bottom) only to 2.3 $cm/min^{0.5}$. As to temperature changes, it was found that in the upper half of the ingot the cooling rate of the outer layers is higher than that of the inner layers, while in the lower half of the ingot the opposite was observed. This non-uniform cooling on the periphery and towards the centre of the ingot causes irregular linear contraction in the initial phase of crystallization, with alternating compression and expansion stresses in the surface layers of the ingot, which results in cracks. Another factor playing a part in fissuring is the relation between the thickness of the solid and solid-liquid elements of the skin in the early stages of crystal-

Improving the Crack Resistance of Steel Ingots

lization. When the solid-liquid elements (having a low strength) develop considerably, the crack resistance of the ingot decreases. The development of the solid-liquid zone in the corner of the ingot bottom - when the case is thin - corresponds to the formation of cracks mostly in these areas. The strength and plasticity of the case was studied in the 1,300-1,125°C heat range (for each 25-50°C) with electro-heating of the specimens for 7-10 minutes. The test results showed that in the heat interval indicated the case of the ingot shows a high plasticity. The strength limit of St.3 ingots between 1,125-1,300°C is relatively low (3.0 and 1.2 kg kg/mm^2 respectively), while the strength limit in the case of 08sp ingots at 1,250°C is by 0.1-0.3 kg/mm^2 lower than for St.3 steel with a higher C-content. The strength limit (for St.3 ingots) in the lower part was found to be about 0.1-0.2 kg/mm^2 higher, than in the top, due to the shorter time of crystallization in this area and the more intensive development of the solid-liquid element at the moment of pouring. In the inner part of the case, in which at the moment of pouring the solid-liquid element prevails, the strength limit is 0.2 kg/mm^2 lower (1.4-1.7 kg/mm^2) than in the completely solidified outer layer (1.52-1.77 kg/mm^2). The main cause of cracking evidently is the intensive linear contraction of the ingot, which, when delayed, results in contracting

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stresses. The appearance of these stresses is also promoted by the non-uniform contraction in the height and periphery of the ingot. With regard to the effect of impurities (sulfides, FeS.MnS, globular inclusions, oxides) it was found that these prevail in the parts of the ingot where the case is insufficiently wetted by the circulation metal. Intensified deoxidation of the metal (by adding aluminum) increases its resistance to cracking increases. This was observed in the zavod Krasnyy Oktyabr (Krasnyy Oktyabr Plant), when 1,200-2,000 g aluminum/ton of armco steel was added. The following data were obtained for these tests:

Amount of aluminum added in the ladle, g /ton steel	1200-1,350	1,400-1,500	1,600-1,700
Amount of heats	6	10	10
Amount of sound ingots, %	46	69	82

When the aluminum content is raised, the amount of oxygen adsorbed by the metal decreases, which contributes to a reduction in red shortness. According to tests of the Red Oktyabr Plant the cracking of steels with a C-content below 0.25% can be prevented when their residual Al-content is $[Al] : [C] > 0.10$. The indicated amount of residual Al can be obtained by adding the following quantities of Al:

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Improving the Crack Resistance of Steel Ingots

S/133/61/000/002/001/014
A054/A033

At a C-content of the steel of, %:	0.20-0,25	0.10-0.15	armco
the required Al-content, g /t:	1200-1,300	1,350-1,500	1800-2000

Based on these tests the process of cracking can be summarized as follows: cracks originate mainly in the corners of the lower half of low-carbon steel ingots with fewer cracks on the bent sides. This type of steel shows a higher degree of linear contraction, than medium and high-carbon steels. In the upper part of the mold the contraction of the ingot is even, in the lower half, however, irregular gaps form between the ingot and the mold. The uneven contraction in this area is caused by the effect of the circulating liquid metal flow on the crystallizing case of the ingot, changing the temperature of the case along the periphery and the crystallization rate. If the contraction is slowed down owing to the roughness of the mold surface or because of the ingot sticking to the mold wall, contraction stresses arise in the case which are proportional to the linear contraction. Due to the non-uniform rate of cooling in the lower halv of the mold, opposing stresses (expanding and compressing) develop and they promote cracking. In order to increase the crack resistance of low-carbon steels, the rate of pouring has to be slowed down and cooling accelerated by enlarging the ingot periphery. This can be attained by giving the ingot a wavy surface. Another

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Improving the Crack Resistance of Steel Ingots

efficient measure is to raise the residual Al-content to Al : C 0.10.
There are 7 figures and 11 Soviet references.

ASSOCIATION: Zavod "Krasnyy Oktyabr" ("Krasnyy Oktyabr" Plant) and Moskovskiy institut stali (Moscow Steel Institute)

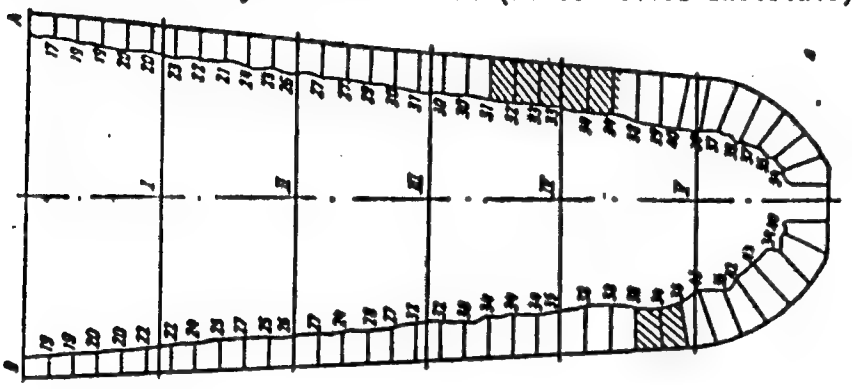

Figure 2a

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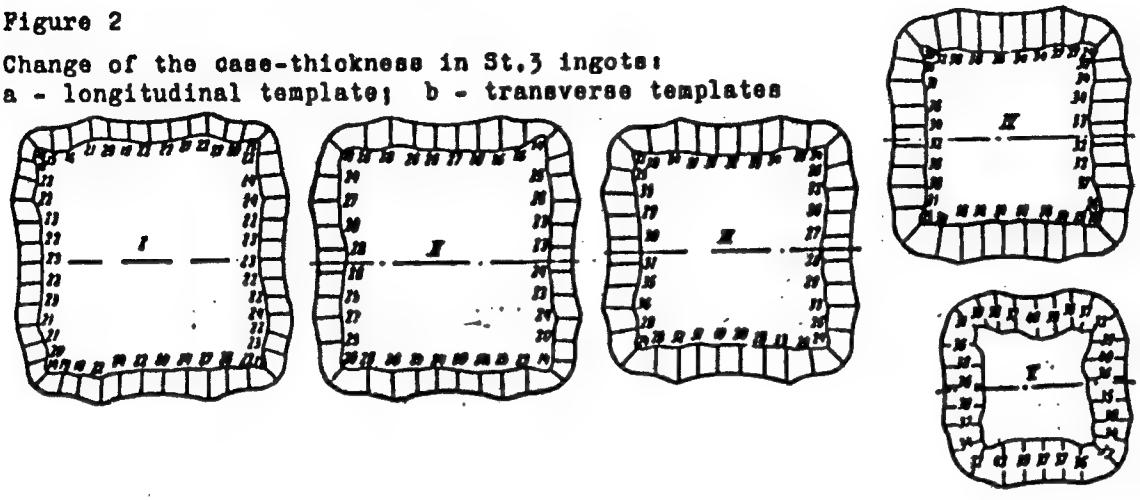
S/133/61/000/002/001/014
A054/A033

Improving the Crack Resistance of Steel Ingots

Figure 2

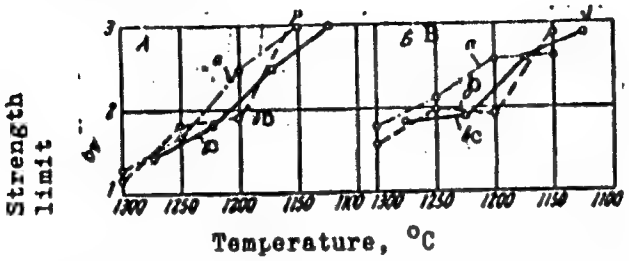
Change of the case-thickness in St.3 ingots:
a - longitudinal template; b - transverse templates



Card 8/11

Improving the Crack-Resistance of Steel Ingots

Figure 5



Change in the strength limit of the case in the top (A) and bottom (B) of an St.3 ingot at high temperatures
a - samples from the corner of the case
b - from the central part of the side
c - from the projecting parts

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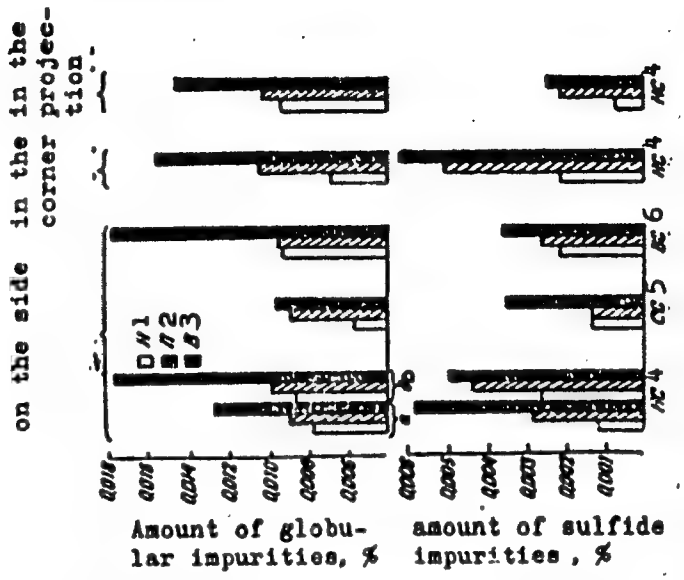
Improving the Crack-Resistance of Steel Ingots

Figure 6:

Change in the amount of non-metallic impurities vertically and in the section of the ingot case
1 - external zone
2 - intermediate
3 - inner
4 - ingot bottom
5 - middle of the ingot
6 - ingot top
a - side, remote from the centre
b - side, near the center

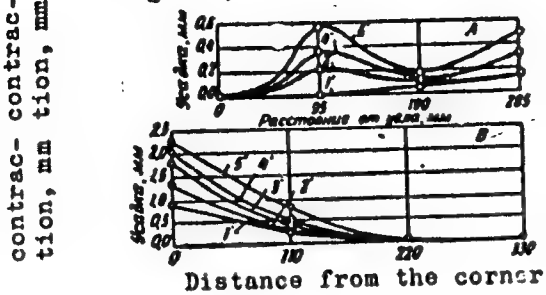


Card 10/11

S/133/61/000/002/001/014
A054/A033

Improving the Crack Resistance of Steel Ingots

Figure 7



Deformation of the case in cross section of the ingot (contraction), in the initial period of crystallization (steel 30T, bottom casting)
A - lower section of the ingot
B - upper section of the ingot (figures on the curves: duration of crystallization of the ingot, min.)

Card 11/11

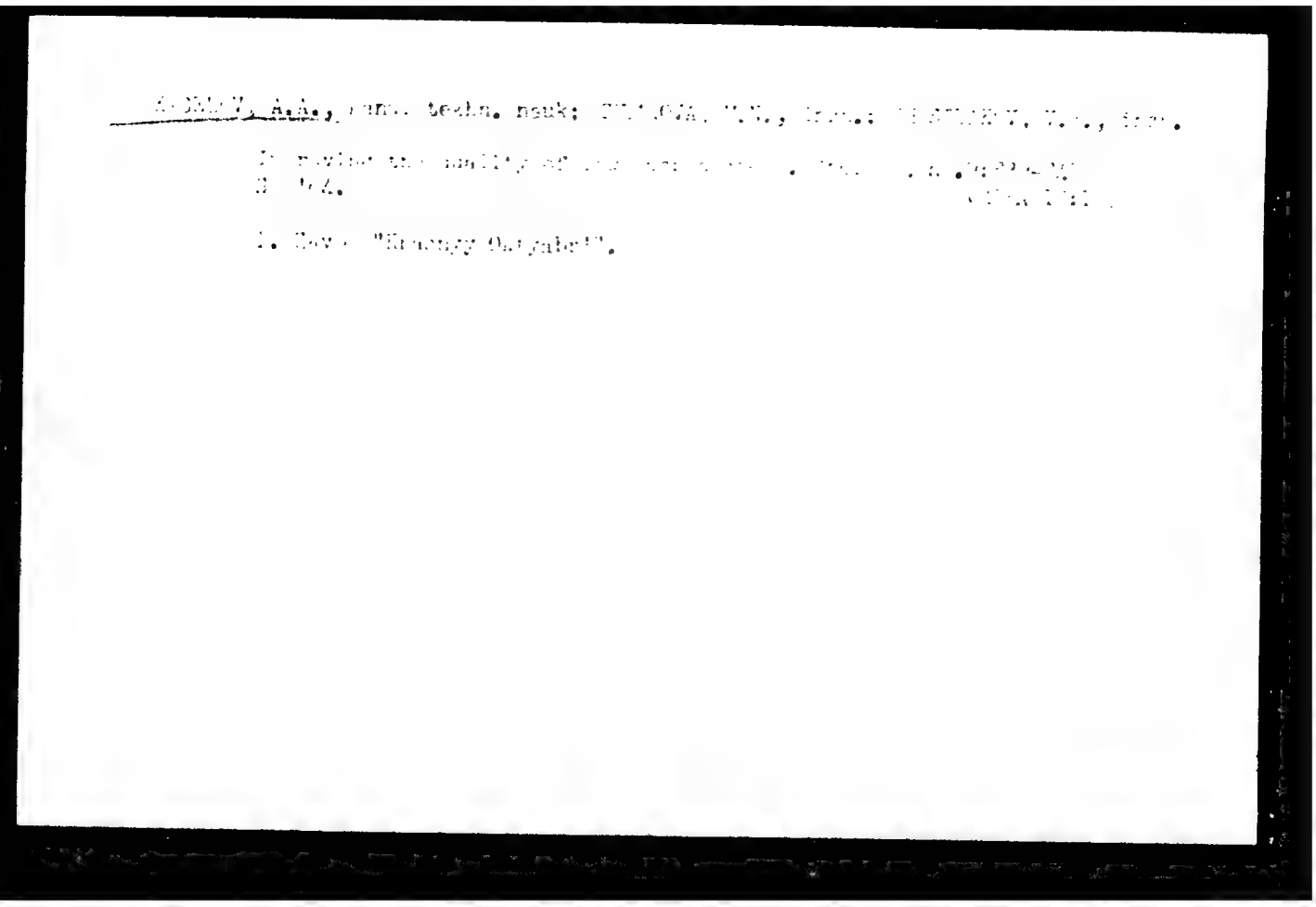
KOSTIN, B.A., inzh.; KISELEV, A.A., inzh.

Attachments and devices for mobile drilling units. Bezop.truda v prom. 6 no.12:28-30 D '62. (MIRA 15:12)
(Boring machinery)

MATEVOSYAN, P.A.; DANILOV, V.I.; LAPSHOVA, M.P.; KISELEV, A.A.; LISOV, I.V.; VOLYANSKIY, V.M.

Improving the quality of blooming mill ingots. Stal' 23 no.12:1086-1087 D '63. (MIRA 17:2)

1. Volgogradskiy metallurgicheskiy zavod "Krasnyy Oktyabr'".



KISELEV, A.A., kand. tekhn. nauk; ANTIPOV, K.I., inzh.; LAPSHOVA, M.P., inzh.; CHISTYAKOV, V.F., inzh.

Increasing the density of 45G2 and other structural steel ingots. Stal' 25 no.12:1090-1091 D '65. (MIRA 18:12)

1. Zavod "Krasnyy Oktyabr'".

KISELEV, A.A.

Theory of the β-band in the absorption spectrum of NaCl crystals. Fiz. tver. tela 5 no.6:1745-1746 Je '63.
(MIRA 16:7)

1. Leningradskiy gosudarstvennyy universitet.

KISELEV, A.A.; ABARENKOV, I.V.

Optical transitions in the U center in a NaCl crystal. Opt. i spektr. 9 no. 6:765-771 D '60. (MIRA 14:1)
(Salt crystals--Spectra)

KISELEV, AA

KISELEV, A.A.; DOLGOVA, L.M.

Chromium oxide content in the batch and in the synthetic ruby.
Trudy Inst.kriat.no.8:47-50 '53. (MLRA 7:5)
(Rubies) (Chromium oxides)

22478

S/035/60/000/04/15/017
A001/A001

Translation from: Referativnyy zhurnal, Astronomiya i Geodeziya, 1960, No. 4, p. 71, # 3387

3.1230 3.2300

AUTHOR: Kiselev, A. A.

TITLE: On the Errors of Optical Center and Distortion in the Interpolation Method at Precise Processing of Photographs of Earth's Artificial Satellites

PERIODICAL: Byul. st. optich. nablyudeniya iskusstv. sputnikov Zemli, 1958, No. 3, pp. 6-10 (English summary)

TEXT: A simple relationship is found out between the systematic error ε_λ of the calculated position of an object and the vector of error E of the adopted position of the photograph optical center, when the location of the object is interpolated from two fundamental stars. A table is given which is used for determination of the maximum error of an object $\varepsilon_\lambda^{max}$ from the given |E| and S (separation between the fundamental stars). The table is intended for applying it to processing photographs of a НАФА (NAFA) camera (F=250 mm). Instruction is given as to processing the photographs of a satellite if the optical center is unknown.

A. A. Kiselev.

Card 1/1

KISELEV, A.A.

Precision of photographic observations of artificial earth satellites with the NAFA- 38/25 camera. Biul. sta.opt.nabl.isk.sput.Zem. no.9:9-14 '59.
(MIRA 13:3)

1. Glavnaya (Pulkovskaya) astronomicheskaya observatoriya AN SSSR.
(Artificial satellites--Tracking)

AUTHOR: Kiselev, A.A. SOV/33-36-2-19/27

TITLE: An Interpolation Method for the Photographic Determination of the Position of a Celestial Object

PERIODICAL: Astronomicheskiy zhurnal,1959,Vol 36,Nr 2,pp 348-360 (USSR)

ABSTRACT: The method of the author is based on precise formulas for the position of a celestial object which is on an arc of a large circle between two given reference stars. These interpolation formulas lead to a new precise method of photographic astronomy which does not use ideal coordinates. The method is applied to the determination of the position of a star-like object, where 3 reference stars are used, and of a sputnik, where 2 reference stars are used. In the second case the method is particularly effective. An estimation of possible errors is made and an example is calculated. The author mentions A.N. Deych. - There are 5 figures, 5 tables, and 4 Soviet references.

ASSOCIATION: Glavnaya astronomicheskaya observatoriya Akademii nauk SSSR (Main Astronomical Observatory of the AS USSR)

SUBMITTED: May 10, 1958

Card 1/1

KISELEV, A.A.; FIRAGO, B.A.; SHCHEGOLEV, D.Ye.

Instructions for determining the coordinates of artificial earth satellites from photographs obtained with the NAFA-3s/25-S cameras. Biul.sta.opt.nabl.isk.sput.Zem. no.3:1-35 '60. (MIRA 13:7)

1. Sotrudniki Glavnoy astronomicheskoy observatorii AN SSSR.
(Arificial satellites--Tracking)
(Astronomical photography)

KISELEV, A.A.; FIRAGO, B.A.

Determining the scale of astrophotographs and the angular velocity of a fast-moving celestial object. Biul.sta.opt.nabl. isk.sput.Zem. no.8:3-6 '60. (MIRA 14:3)
(Artificial satellites--Tracking)
(Astronomical photography)

KISELEV, A.A.

Effect of the error of the assumed position of the optical center on the results of the reduction of astrophotographs. Izv. GAO 22 no. 1:165-175 '60. (MIRA 13:12)
(Astronomical photography)

KISELEV, A. A.

Cand Phys-Math Sci - (diss) "Interpolation method of determining photographic positions of heavenly objects, and its use in the processing of observations of artificial satellites." Leningrad, 1961. 16 pp; (State Astronomical Inst imeni P. K. Shternberg); 220 copies; free; (KL, 7-61 sup, 219)

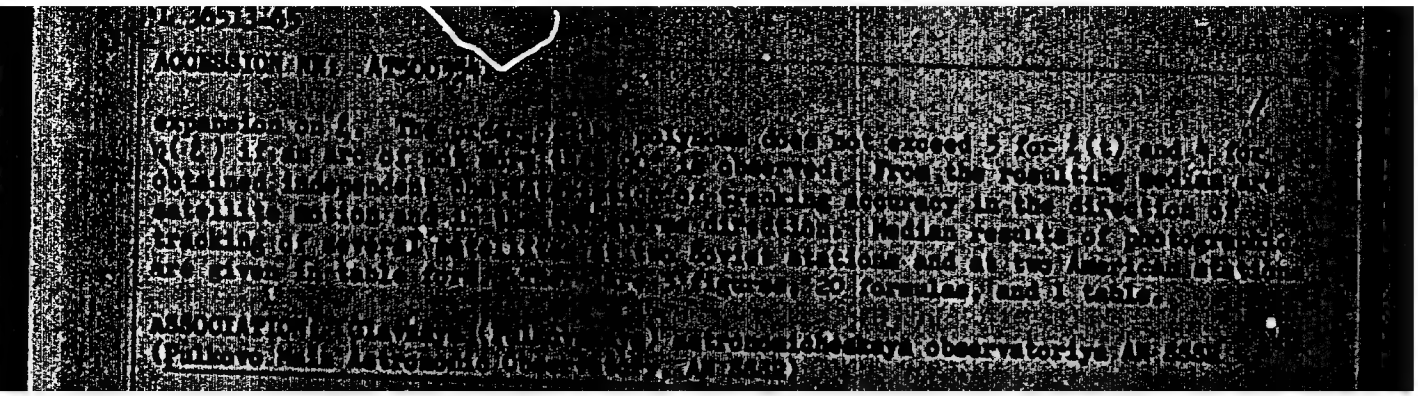
KISELEV, A.A.

Reduction for distortion in photographic positions of celestial bodies determined with a small number of reference stars. Izv.GAO 23 no.1:153-168 '62. (MIRA 20:12)

KISELEV, A.A.

Using the equalizing observations method for evaluating the precision of the position of an artificial earth satellite. Biul. stn. opt. nabl. isk. sput. Zem no.32:16-24 '63. (MIRA 17:7)

1. Glavnaya (Pulkovskaya) astronomicheskaya observatoriya AN SSSR.



KISELEV, A.A.

Determining the scale of the 26" refracting telescope of the Pulkovo Observatory. Izv. GAO 23 no.4:120-126 '64.
(MIRA 17:9)

KISLYAN, A.A.; PLYUGIN, G.A.

Determination of the optical center of the 2.6" refracting telescope. Izv. GAO 23 no.4:127-129 '64. (MIRA 17:9)

KISELEV, A.A.

Vector interpretation of the principal methods of photographic astrometry. Astron.zhur. 42 no.2:452-463 Mr-Ap '65.
(MIRA 18:4)

1. Glavnaya astronomicheskaya observatoriya AN SSSR.

L 00466-66 EWT(1) W

ACCESSION NR: AP5020683

UR/0033/65/042/004/0831/0844
522.71

AUTHOR: Kiselev, A. A.

TITLE: Application of homography to photographic astrometry

SOURCE: Astronomicheskiy zhurnal, v. 42, no. 4, 1965, 831-844

TOPIC TAGS: photographic astrometry, astronomy, homography, star, celestial body

ABSTRACT: The application of homography to the determination of measured star positions is discussed in detail. In part I the problem of finding a reference point to the object measured on plate Π relative to the coordinate system of a comparison plate Π' of arbitrary inclination to Π is analyzed. The solution is given in terms of homographic coordinates of the object which determine its position relative to four stars $S_j (j = 1,2,3,4)$. The homographic scheme is shown in Fig. 1 on the Enclosure where S_0 represents the object. From this diagram the following homographic coordinates are constructed for S_0:

$$h_1 = \frac{M_4 S_0}{S_0 M_3} : \frac{M_4 Q^*}{Q^* M_3}; \quad h_2 = \frac{M_1 S_0}{S_0 M_2} : \frac{M_1 Q^*}{Q^* M_2}.$$

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Next, these coordinates are used to calculate the position of the object ξ, η on the plate relative to TT'. This is done by calculating the Schlesinger functions $\{D'\}$ in terms of h_1 and h_2 under the constraint

$$\sum_{j=1}^{4} D_j' = 1.$$

The coordinates of the object are then obtained from

$$\xi_0' = \sum_{j=1}^{n} D_j' \xi_j'; \quad \eta_0' = \sum_{j=1}^{n} D_j' \eta_j'.$$

In part II, the method of homography is applied to the determination of the spherical coordinates of celestial bodies. The vector components of each of the reference stars is determined, first in spherical coordinates, followed by the calculation of the vector-scalar products of these vectors. Finally, the coefficients $H_j^{(k)}$ are determined from the generalized expression

$$r_0 = \frac{1}{R_k R_k^*} \sum_{j=1}^{4} H_j^{(k)} r_j, \quad k = 1, 2, 3, 4$$

which then gives the coordinates of the object from the expressions

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ACCESSION NR: AP5020683

$$\operatorname{tg}\alpha_0 = \frac{\sum_{j=1}^{4} H_j^{(2)} Y_j}{\sum_{j=1}^{4} H_j^{(2)} X_j}; \quad \operatorname{tg}\delta_0 = \frac{\sum_{j=1}^{4} H_j^{(2)} Z_j}{\sqrt{\left(\sum_{j=1}^{4} H_j^{(2)} X_j\right)^2 + \left(\sum_{j=1}^{4} H_j^{(2)} Y_j\right)^2}}$$

In part III, an example is given for an object whose optical center is unknown. It is found that the homographic coordinate solution is equivalent to the solution of a linear-fractional transformation with 8 constants. When compared to the classical 2 x 3 or 2 x 5 methods, the homographic approach is found to be more accurate and is useful in all situations where the Schlesinger functions are applicable. Orig. art. has: 36 equations, 7 tables, and 1 figure.

ASSOCIATION: Glavnaya astronomicheskaya observatoriya, Akademii Nauk SSSR (Main Astronomical Observatory, Academy of Sciences, SSSR)

SUBMITTED: 09Dec64 ENCL: 01 SUB CODE: AA

NO REF SOV: 003 OTHER: 004

Card 3/4

L 00166-66

ACCESSION NR: AP5020683

ENCLOSURE: 01

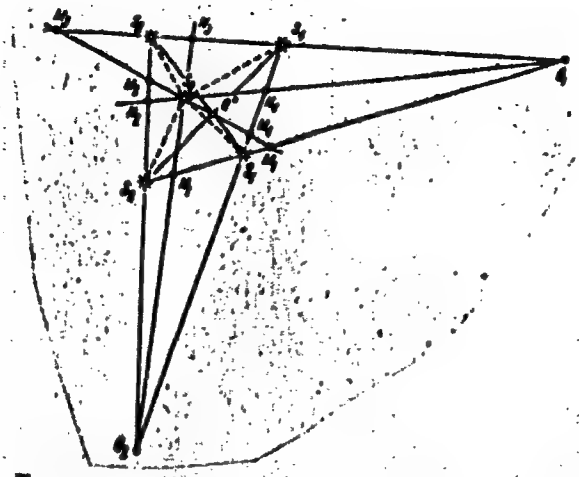


Fig. 1: Homographic scheme in the 4-star problem

Card 4/4

[illegible]

AUTHOR: [illegible], A. A.

TITLE: [illegible] method for determining the position of the optical center from [illegible]

SOURCE: Ref. zh. Issledovaniye kosmicheskogo prostranstva, Abs. 7.62.106

REF SOURCE: Byul. st. optich. nablyud. ISZ, no. [illegible], [illegible], 9-12

TOPIC TAGS: star, optic center, interpolation, reference star

ABSTRACT: The existing methods for reduction of photographs taken on artificial earth satellites require the location of the optical center on the plate with an accuracy of not less than ±1 mm (±14' for cameras with F = 250 mm). Some difficulties arise in determining the position of the optical center when the precision of the applied method depends on the configuration of the selected stars, measurement errors, and catalog positions. Therefore, an analytical method is proposed for determining the position of the optical center of photographs which ensures greater precision and makes it possible to obtain directly the equatorial coordinates of the desired point. The four reference stars selected (the distance

Card 1/2

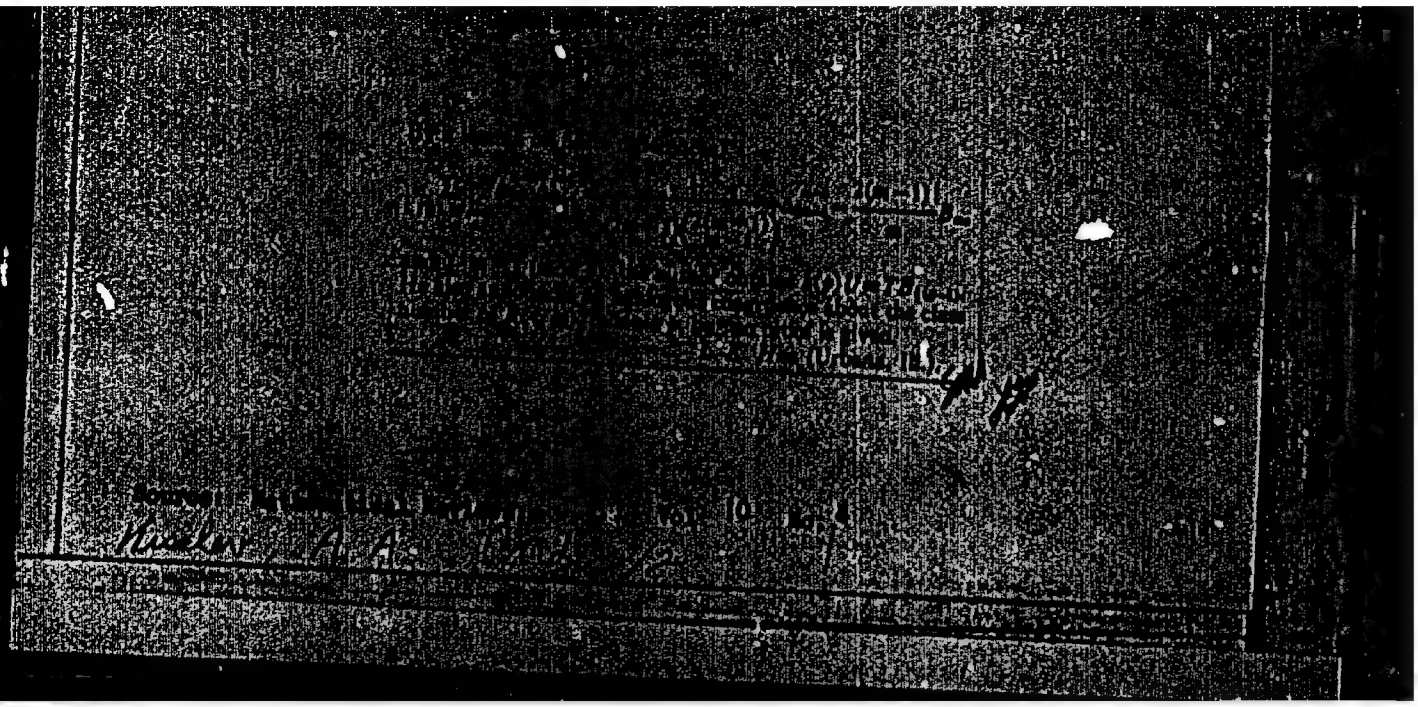
ACC NR: AT6032364

between two stars is $\sim 6-7°$) form, if possible, a regular quadrangle in respect to the geometric center of the photograph. Two expressions are compared for [illegible] parameters, determining the vector of the point of intersection of the diagonals of the reference stars (S_0). In view of the projection properties of the S_0 point, the expressions for λ_1, λ_2 are equal when obtained from the known spherical coordinates of reference stars and from measurements distorted by a yet-to-be determined effect of the optical center. These two quantities determine the expression for calculations of the coordinates:

$$\operatorname{tg} A = YT/XT;\ \operatorname{tg} D \sec A = ZT/XT$$

The four auxiliary dimensional vectors X, Y, Z, T are the functions of the spherical and measured stellar coordinates and serve as the initial of the conditions of the problem. Control of the solution is available. The proposed method ensures optical center determinations accurate to 20' if the errors of coordinates do not exceed 2". This method of calculations can be computerized. N. Rizvanov. [Translation of abstract]

SUB CODE: 03/



KISELEV, A.A.

Comparisions for the number of classes of ideals of real quadratic fields. Uch. zap. LGU no.111:20-31 '49. (MLRA 10:8)
(Fields, Algebraic)

KISELEV, A. A.
USSR/Mathematical Physics

Card 1/1

Author : Kiselev, A. A. and Ladyzhenskay, O. A.

Title : About solving linearized equations of plain, unstable flow of a viscous incompressible liquid.

Periodical : Dokl. AN SSSR 95, 6, 1161 - 1164, 21 Apr 1954

Abstract : The article gives a solution for linearized equations of a flat unstable flow of a viscous, incompressible liquid by breaking down a properly chosen differential operator into linear forms in accordance with its conditional elements. Besides this, the article analyses the behavior of the solution when $t \to \infty$. However, the analysis of the solution is made only for two cases: flowing around a disc and flowing around a sphere. Special functions were used for the solution.

Institution : Leningrad State Pedagogical Institute

Submitted : 19 Feb 1954

KISELEV A.A.

USSR/ Physics - Mathematical physics

Card 1/1 Pub. 22 - 8/49

Authors : Kiselev, A. A.

Title : About unsteady flow of a viscous liquid in the presence of external forces

Periodical : Dok. AN SSSR 100/5, 871-874, Feb 11, 1955

Abstract : A method is presented for solving the boundary problem for a cylinder $Q=\Omega\times(0<t<T)$, where the Ω is a limited region of x_1 and x_2 variation and the T is a positve constant depending on the Ω, initial conditions and forces acting at the liquid. If the forces have a potential and the initial disturbances are not great, then the $T\to\infty$ is uniformly (along x_1 and x_2) approching to 0. Five references: 3 French and 2 USSR (1933-1953).

Institution : Leningrad State Pedagogical Institute

Presented by : Academician V. I. Smirnov, July 5, 1954

KISELEV, A.A.

1 - P/M

Kiselev, A. A. Solution of the linearized equations of unsteady flow of a viscous incompressible fluid in an unbounded region. Dokl. Akad. Nauk SSSR (N.S.) 101, 43–46 (1955). (Russian)

Soient : Ω, un domaine borné, simplement connexe (de l'espace ordinaire x_1, x_2, x_3) dont S est la frontière; $Q=\Omega\times[0\leq t\leq T]$; $f(x_i, t)$ un vecteur défini sur Q dont les composantes $\in L_2$ sur Q (propriété qu'on notera dans la suite : $f \in L_2(Q)$); H, l'espace des f sur lequel on a défini le produit scalaire $(f, \varphi)=\int f\cdot\varphi dQ$. On sait qu'on a la décomposition : $H=J\oplus G$, où J et G sont deux sous-espaces orthogonaux complémentaires de H, tels que tout $v \in J$ est solénoïdal et tangent à la surface latérale du cylindre Q à la frontière et tout $g \in G$ est de la forme grad p, $p(x, t)$ étant une fonction scalaire à dérivées premières en x_i continues.

Alors l'A. démontre le résultat suivant. Pour tout $f \in H$, il existe un système et un seul de solution u, p du système :

$$\frac{\partial u}{\partial t}-\Delta u+\operatorname{grad} p=f, \quad \operatorname{div} u=0,$$

KISLIEV, A.A.

avec les conditions aux limites: $u|_S=0$, $u|_{t=0}=0$, tel que $\partial u/\partial t \in L_2(Q)$, $\partial u/\partial x \in L_2(Q)$ presque partout sur $0 \le t \le l$. Les propriétés de régularité de u et $\tilde{A}u$ sont précisées.

Ce résultat remarquable, établi en utilisant les récentes méthodes de O. Ladyženskaya, entraîne l'unicité et l'existence de la solution du système linéarisé de Navier dans le cas des données initiales homogènes. On peut l'étendre au cas où $u|_{\Sigma_1}\neq 0$ et aux domaines Ω non bornés.

J. Kravtchenko (Grenoble).

KISELEV, A.A.

Generalization of the Kleiber's theorem. Vest.Len un. 11 no.19:163-173 '56. (MLRA 10:1)

(Stars--Motion in line of sight)

KISELEV, A.A.

USSR/ Mathematics - Physics

Card 1/1 Pub. 22 - 7/43

Authors : Kiselev, A. A.

Title : Irregular flow of a viscous incompressible fluid in a bounded three-dimensional region

Periodical : Dok. AN SSSR 106/1, 27-30, Jan 1, 1956

Abstract : A proof is presented for the existance and singularity of the solution of a problem in determining a region $Q_l = \Omega \times [0 \leq t \leq l]$ of the velocity vector $v = (v_1(x,t), v_2(x,t), v_3(x,t))$, i.e., in three-dimensional space. Similar problems for one and two-dimensional cases were proved by the author in earlier work. Three USSR references (1950-1955).

Institution : Leningrad State Pedagogical Institute

Presented by: Academician V. I. Smirnov, July 18, 1955

KISELEV, A.A.

AUTHOR: KISELEV, A.A., LADYZHENSKAYA, O.A. 38-5-4/6

TITLE: On the Existence and Uniqueness of the Solution of the Non-steady Problem for a Viscous Incompressible Fluid (O sushchestvovanii i yedinstvennosti resheniya nestatsionarnoy zadachi dlya vyazkoy neszhimayemoy zhidkosti).

PERIODICAL: Izvestiya Akad.Nauk,Ser.Mat.,1957,Vol.21,Nr 5,pp.655-680,(USSR)

ABSTRACT: The present paper contains the proofs of the theorems of existence and uniqueness which were announced last year by Kiselev (Doklady Akad.Nauk 106, 27-30, 1956) for the systems

$$\frac{\partial \vec{v}}{\partial t} - \nu\Delta\vec{v} + \sum_{k=1}^{3} v_k \frac{\partial \vec{v}}{\partial x_k} = -\operatorname{grad} p + \vec{f}(x,t)$$

(1)

$$\operatorname{div}\vec{v} = 0\,, \quad \vec{v}\big|_s = 0\,, \quad \vec{v}\big|_{t=0} = \vec{a}$$

and

$$\frac{\partial \vec{v}}{t} - \nu\Delta\vec{v} + \sum_{k=1}^{3} v_k \frac{\partial \vec{v}}{\partial x_k} = \vec{f}(x,t)$$

(2)

$$\vec{v}\big|_s = 0\,, \quad \vec{v}\big|_{t=0} = \vec{a}$$

CARD 1/2 Furthermore estimations of the solutions are proved according

On the Existence and Uniqueness of the Solution of the Nonsteady Problem for a Viscous Incompressible Fluid 38-5-4/6

to Ladyzhenskaya and the differential properties of the solutions are investigated. The most essential result is the answering of the question in which functional classes (1) possesses a unique solution.

PRESENTED: By V.T. Smirnov, Academician
SUBMITTED: March 16, 1957
AVAILABLE: Library of Congress

CARD 2/2

KISELEV, A.A.; OKUNEVA, L.A.

Determination of certain trigonometric sums with coefficients representing arithmetical functions. Uch zap. Ped inst Gerts. 197:5-8 '58.
(MIRA 16:9)

(Series)

KISELEV, A.A.

16(1) PHASE I BOOK EXPLOITATION SOV/2660

Vsesoyuznyy matematicheskiy s"yezd. 3rd, Moscow, 1956

Trudy. t. 4: Kratkoye soderzhaniye sektsionnykh dokladov. Doklady inostrannykh uchenykh (Transactions of the 3rd All-Union Mathematical Conference in Moscow. vol. 4: Summary of Sectional Reports. Reports of Foreign Scientists) Moscow, Izd-vo AN SSSR, 1959. 247 p. 2,200 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Matematicheskiy institut.

Tech. Ed.: G.N. Shevchenko; Editorial Board: A.A. Abramov, V.G. Boltyanskiy, A.M. Vasil'yev, B.V. Medvedev, A.D. Myshkis, S.M. Nikol'skiy (Resp. Ed.), A.G. Postnikov, Yu. V. Prokhorov, K.A. Rybnikov, P. L. Ul'yanov, V.A. Uspenskiy, N.G. Chetayev, G. Ye. Shilov, and A.I. Shirshov.

PURPOSE: This book is intended for mathematicians and physicists.

COVERAGE: The book is Volume IV of the Transactions of the Third All-Union Mathematical Conference, held in June and July 1956. The book is divided into two main parts. The first part contains summaries of the papers presented by Soviet scientists at the Conference that were not included in the first two volumes. The second part contains the text of reports submitted to the editor by non-Soviet scientists. In those cases when the non-Soviet scientist did not submit a copy of his paper to the editor, the title of the paper is cited and, if the paper was printed in a previous volume, reference is made to the appropriate volume. The papers, both Soviet and non-Soviet, cover various topics in number theory, algebra, differential and integral equations, function theory, functional analysis, probability theory, topology, mathematical problems of mechanics and physics, computational mathematics, mathematical logic and the foundations of mathematics, and the history of mathematics.

16(1)

AUTHORS: Kiselev, A.A., Slavutskiy, I.Sh.

SOV/20-126-6-10/67

TITLE: On the Number of Classes of Ideals of a Quadratic Field and its Rings

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 6, pp 1191 - 1194 (USSR)

ABSTRACT: Let $R(\sqrt{d})$ be a real quadratic field with the fundamental discriminant d, principal unit $E_1 = T_1 + U_1\sqrt{d}$ and the number of ideal classes $h = h(d)$. Let p be a prime number and $p \nmid d$. The congruence

$$(1)\quad h\frac{\bar{U}1}{p^l} \equiv -\frac{\bar{T}\,1}{2d(p-1)p^{l-1}}\sum_{u=0}^{d-1}\left(\frac{d}{u}\right)B_{(p-1)p^{l-1}}\left(\frac{u}{d}\right) \pmod{p^l}$$

is proved.

Here it is $\bar{E}_1 = \bar{T}_1 + \bar{U}_1\sqrt{d} = E_1^{(1-(\frac{d}{p})\frac{1}{p})p^{l}}$, $l \geqslant 1$,

$\left(\frac{d}{u}\right)$ the Kronecker symbol; $B_m(x)$ Bernoulli polynomial which is

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On the Number of Classes of Ideals of a Quadratic Field and its Rings SOV/20-126-6-10/67

defined by the symbolic equation $B_m(x) = (B + x)^m$ under the assumption that the Bernoulli numbers satisfy the symbolic relation $(B + 1)^k = B^k$, $k = 2,3, \ldots$, $B_o = 1$.

The congruence (1) is obtained from the Dirichlet formula. There are 10 references, 4 of which are Soviet, 3 German, 2 American, and 1 Swiss.

PRESENTED: February 28, 1959, by V.I. Smirnov, Academician

SUBMITTED: February 25, 1959

KISELEV, A.A.; SLAVUTSKIY, I.Sh.

Some congruences for the number of representations of an odd number of squares by sums. Dokl. AN SSSR 143 no.2:272-274 Mr '62. (MIRA 15:3)

1. Predstavleno akademikom V.I.Smirnovym.
(Congruences and residues)

KISELEV, A.A.

Formula describing the energy of a many-electron system with one vacant site. Vest. LGU. 18 no.16:51-55 '63. (MIRA 16:11)

L 26155-66 EEC(k)-2/EWT(1)/EWA(d)/FSS-2 SCTB IJ/DD/GW

ACC NR: AN6014086 (N) SOURCE CODE: UR/9008/66/000/112/0004/0004

AUTHOR: Pravetskiy, V. N.; Gurovskiy, N. N.; Yegorov, B. B.; Kiselev, A. A.

ORG: none

TITLE: An important stage in space medicine. Results of the experiment with sputnik Kosmos-110

SOURCE: Krasnaya vzezda, 17 May 66, p. 4. col. 1-5

TOPIC TAGS: weightlessness, space medicine, space flight, spacecraft, dog/ Kosmos-110 spacecraft

ABSTRACT: Clinical data on the dogs Vgolek and Veterok, following an extended space flight on Kosmos-110, are presented. The aim of the experiment was to determine the effect of extended periods of weightlessness on living organisms. Immediately following the flight, both test animals registered a decrease in muscular volume and a loss of coordination. In the first few days following the flight, an upsurge in the calcium content of the urine and blood was observed. Disturbance of the calcium regime during extended space flight is earmarked for further study. In both animals, gastrointestinal disturbances vanished after 6-8 days. The data point to the adaptation of the animals' cardiovascular systems to the state of weightlessness while the return to the earth's gravitational field served to further aggravate certain disruptions in their bodily functions, the animals ultimately returned to normal. The authors con-

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ACC NR: AN6014086

clude that the question whether a man or animal can return to normal (without great difficulty) following extremely long periods of weightlessness remains unanswered.

SUB CODE: 06, 22/ SUBM DATE: 00/ ORIG REF: 000/ OTH REF: 000

Card 2/2

ACC NR: AT6036556 SOURCE CODE: UR/0000/66/000/000/0160/0161

AUTHOR: Yegorov, B. B.; Yegorov, A. D.; Kiselev, A. A.; Shadrintsev, I. S.

ORG: none

TITLE: Some problems in planning and analysis of physiological flight experiments [Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24 to 27 May 1966]

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 160-161

TOPIC TAGS: space physiology, manned space flight, bioastronautics, space biologic experiment

ABSTRACT: 1. The ultimate result of each physiological space experiment is information which can be gathered by the cosmonaut-investigator and can be recorded on on-board and telemetric systems. The information obtained, after appropriate analysis is applied to deciding the duration of future spaceflights and to methods of combating unfavorable spaceflight factors.

2. The most useful and objective physiological information can be directly gathered by a specialist-investigator during the flight itself. In this situation, it is entirely expedient to alter earlier established medical and biological investigations to fit definite situations which may develop

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during the flight.

3. The purpose of this report is to analyze physiological data obtained from manned and biosatellite experiments critically, so that future physiological space experiments can be planned more rationally.

4. In planning flight experiments, points of utmost importance are:

- selecting physiological parameters which would guarantee the collection of data necessary for judging the functional condition of the organism during the flight in comparison with corresponding data from earth-side experiments. This would include an investigation of daily rhythms.

- establishing scientifically based periods of time during which the necessary recording of physiological parameters would be conducted with the aim of drawing statistically reliable conclusions on changes in the indices of physiological functions.

- establishing a scientifically based volume of selective measurements for deciphering the data obtained.

ACC NR: AT6036556

- selecting a program for conducting space physiological experiments which would assure comparison of the results of each subsequent experiment with the results of former experiments.

After a sufficient number of physiological space experiments, conclusions based on mathematical methods could be drawn of both individual and species-specific reactions of animals and man to spaceflight factors.

5. To solve these planning problems, both mathematical and physiological methods were used. These data show the expediency of using complex physiological and mathematical methods for planning physiological space experiments with the help of computer technology. [W.A. No. 22; ATD Report 66-116]

SUB CODE: 06, 22 / SUBM DATE: 00May66

Card 3/3

AP6036579 SOURCE CODE: UR/0000/66/000/000/0202/0203

AUTHOR: Kiselev, A. A.; Nikolayev, S. O.; Chizhov, G. K. 22

ORG: None

TITLE: Possibility of using the polycardiographic method for medical control of cosmonauts during flight [Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24 to 27 May 1966]

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 202-203

TOPIC TAGS: space medicine, biotelemetry, cardiology, polycardiography, bioinstrumentation

ABSTRACT: Methods used for medical monitoring of spaceflights must satisfy two basic requirements. Sensors for picking up physiological information must be located on the body surface of the cosmonaut and must be technically reliable. The data obtained must provide sufficient information concerning possible changes in the functional condition of the cosmonaut's organism.

On the basis of experience with manned spaceflights it is possible to

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state that the observed shifts (changes in arterial pressure, pulse rate, irritability, etc.), did not exceed physiological norms, and were related to shifts in hemodynamics in the organism accompanied by vegetative reactions, characterized by the motion sickness syndrome and those effects which are associated with the return of cosmonauts to Earth. Since these shifts mainly involved the circulatory system, the need for a more complete evaluation of the activity of the cardiovascular system in designing medical monitoring systems for prolonged spaceflights becomes obvious.

Taking the requirements outlined above into account, the selected method of monitoring the condition of the cardiovascular system of the cosmonaut can be based on an analysis of the phase structure of the cardiac cycle based on polycardiography, obtainable with the aid of simple and reliable sensors. Using the proposed method, it is possible on the basis of duration of individual phases of the cardiac cycle to obtain quantitative characteristics of the contractual ability of the myocardium, to determine the temporal relationship between electrical and mechanical aspects of cardiac activity, and to evaluate the state of the regulatory mechanism of circulation under the influence of extreme spaceflight factors. These data, along with determination of the minute volume